

Amendments to The Claims

The following listing of claims replaces all prior versions and listings of the claims in this application.

Listing of the Claims

1-193. (Cancelled)

194. (Currently amended) An isolated heteromeric taste receptor that responds to umami taste stimuli and comprises ~~comprising~~ at least one T1R1 polypeptide and at least one T1R3 polypeptide ~~that specifically binds and/or which is activated by umami taste stimuli,~~ wherein said T1R1 polypeptide is (i) encoded by a nucleic acid sequence comprising SEQ. ID. NO: 8, (ii) encoded by a nucleic acid sequence comprising a nucleic acid that hybridizes to SEQ. ID. NO: 8 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS, or (iii) a T1R1 polypeptide possessing at least 95% sequence identity to the T1R1 polypeptide of SEQ. ID. NO: 5;

and wherein said T1R3 polypeptide is (i) encoded by a nucleic acid sequence comprising SEQ. ID. NO: 9 or SEQ. ID. NO: 11; (ii) encoded by a nucleic acid sequence that hybridizes to SEQ. ID. NO: 9 or SEQ. ID. NO: 11 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, 10% SDS; and washing at 65°C in a solution comprising 0.2X SCC and 0.1% SDS, or (iii) a T1R3 polypeptide possessing at least 95% sequence identity to the T1R3 polypeptide of SEQ. ID. NO: 4 or SEQ. ID. NO: 7.

195. (Previously presented) The isolated heteromeric receptor of claim 194, which is expressed by a recombinant host cell that contains T1R1 and T1R3 nucleic acid sequences.

196. (Previously presented) The isolated heteromeric receptor of claim 194, wherein said T1R1 polypeptide is selected from the group consisting of human, mouse and rat T1R1 and said T1R3 is selected from the group consisting of human mouse and rate T1R3.

197. (Previously presented) The isolated heteromeric receptor of claim 194, wherein said T1R1 and T1R3 are of different species origin.

198. (Previously presented) The isolated heteromeric receptor of claim 194, wherein said T1R1 and T1R3 polypeptide are of the same species origin.

199. (Currently amended) The isolated heteromeric receptor of claim 194, wherein said T1R1 polypeptide has the sequence ~~contained in~~ of SEQ. ID. NO: 5.

200. (Canceled) ~~The isolated heteromeric receptor of claim 194, wherein said T1R1 receptor polypeptide has an amino acid sequence that possesses at least 90% sequence identity to the polypeptide contained in~~ of SEQ. ID. NO: 5.

201. (Currently amended) The isolated heteromeric receptor of claim 194, wherein said T1R1 receptor polypeptide has an amino acid sequence that possesses at least 95% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 5.

202. (Currently amended) The isolated heteromeric receptor of claim 194, wherein said T1R1 receptor polypeptide has an amino acid sequence that possesses at least 96% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 5.

203. (Currently amended) The isolated heteromeric receptor of claim 194, wherein said T1R1 receptor polypeptide has an amino acid sequence that possesses at least 97% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 5.

204. (Currently amended) The isolated heteromeric receptor of claim 194, wherein said T1R1 receptor polypeptide has a sequence that possesses at least 98% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 5.

205. (Currently amended) The isolated heteromeric receptor of claim 194, wherein said T1R1 receptor polypeptide has an amino acid sequence that possesses at least 99% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 5.

206. (Currently amended) The isolated heteromeric receptor of claim ~~195~~ 194, wherein said T1R1 polypeptide is encoded by the nucleic acid sequence ~~contained in~~ of SEQ. ID. NO: 8.

207. (Currently amended) The isolated heteromeric receptor of claim 194, wherein said T1R1 polypeptide is encoded by a nucleic acid sequence that ~~specifically hybridizes under stringent hybridization conditions to the nucleic acid sequence contained in SEQ. ID. NO: 8~~ hybridizes to SEQ ID NO: 8 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS or a fragment thereof that when expressed in association with a T1R3 polypeptide results in a functional T1R1/T1R3 heteromeric taste receptor that specifically binds and/or is activated by umami taste stimuli.

208. (Canceled) ~~The isolated heteromeric receptor of claim 194, wherein said T1R1 is a fragment of the sequence contained in SEQ. ID. NO: 5 that when expressed in association with a T1R3 polypeptide results in a T1R1/T1R3 heteromeric taste receptor that specifically binds and/or is activated by umami taste stimuli.~~

209. (Currently amended) The isolated heteromeric receptor of claim 194, wherein said T1R3 is a human T1R3 polypeptide having the sequence ~~contained in~~ of SEQ. ID. NO: 7.

210. (Canceled) ~~The isolated heteromeric receptor of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide having at least 90% sequence identity to the polypeptide contained in SEQ. ID. NO: 7.~~

211. (Currently amended) The isolated heteromeric receptor of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide having at least 95% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 7.

212. (Currently amended) The isolated heteromeric receptor of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide having at least 96% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 7.

213. (Currently amended) The isolated heteromeric receptor of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide having at least 97% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 7.

214. (Currently amended) The isolated heteromeric receptor of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide having at least 98% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 7.

215. (Currently amended) The isolated heteromeric receptor of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide having at least 99% sequence identity to the polypeptide ~~contained in~~ of SEQ. ID. NO: 7.

216. (Currently amended) The isolated heteromeric receptor of claim ~~195~~ 194, wherein said T1R3 polypeptide is encoded by the nucleic acid sequence ~~contained in~~ of SEQ. ID. NO: 9 or SEQ. ID. NO: 11.

217. (Currently amended) The isolated heteromeric reporter of claim ~~195~~ 194, wherein said T1R3 polypeptide is encoded by a nucleic acid sequence that ~~specifically hybridizes to the nucleic acid sequence contained in SEQ. ID. NO: 9 under stringent hybridization conditions~~ hybridizes to SEQ ID NO: 9 or SEQ. ID. NO: 11 under stringent hybridization conditions which are conducting the hybridization reaction at 42°C in a solution comprising 50% formamide, 5X SSC, and 1% SDS and washing at 65°C in a solution comprising 0.2X SSC and 0.1% SDS or is a fragment thereof that when expressed in association with T1R1 results in a heteromeric T1R1/T1R3 umami taste receptor that specifically binds to and/or is activated by umami taste stimuli.

218. (Previously presented) The isolated heteromeric receptor of claim 194 which is expressed by a recombinant host cell.

219. (Currently amended) The isolated heteromeric receptor of claim ~~194~~ 218, wherein said cell is a mammalian, yeast, insect or amphibian cell.

220. (Currently amended) ~~The isolated heteromeric receptor of claim 194 which is comprised in a membrane extract~~ A membrane extract comprising said heteromeric receptor of claim 194.

221. (Currently amended) ~~The isolated heteromeric receptor of claim 194 which is comprised in a lipid bilayer~~ A lipid bilayer comprising said said heteromeric receptor of claim 194.

222. (Previously presented) The isolated heteromeric receptor of claim 194 which is immobilized on a solid phase.

223. (Previously presented) The isolated heteromeric receptor of claim 194 which is attached to a detectable label.

224. (Currently amended) The isolated heteromeric receptor of claim ~~225~~ 223, wherein said label is an enzyme, radionuclide, fluorophore or chemiluminescent compound.

225. (Previously presented) The isolated heteromeric receptor of claim 194 which further comprises a G protein.

226. (Previously presented) The isolated heteromeric receptor of claim 225, wherein said G protein is $G_{\alpha 15}$, $G_{\alpha 16}$, gustducin or transducin.

227. (Previously presented) The isolated heteromeric receptor of claim 194 which is complexed with an antibody.

228. (Previously presented) The isolated heteromeric receptor of claim 194 which is in solution.

229. (Currently amended) The isolated heteromeric receptor of claim 194 wherein said T1R1 polypeptide comprises the amino acid sequence ~~contained in~~ of SEQ. ID. NO: 5 and said T1R3 polypeptide comprises the sequence ~~contained in~~ of SEQ. ID. NO: 4 or SEQ. ID. NO: 7.

230. (New) An isolated heteromeric taste receptor that responds to umami taste stimuli and comprises at least one T1R1 polypeptide and at least one T1R3 polypeptide, wherein said T1R1 polypeptide possesses at least 95% sequence identity to the human, mouse, or rat T1R2 of Figure 1; and wherein said T1R3 polypeptide possesses at least 95% sequence identity to the human, mouse, or rat T1R3 of Figure 1.

231. (New) The isolated heteromeric receptor of claim 194 which is expressed by a recombinant host cell.

232. (New) The cell of claim 231, which is selected from the group consisting bacterial, yeast, mammalian, amphibian and insect cells.

233. (New) The cell of claim 231, wherein said cell is a prokaryotic cell.

234. (New) The cell of claim 231, wherein said cell is a eukaryotic cell.

235. (New) The cell of claim 234, wherein the eukaryotic cell is a CHO, HEK-293, COS or Xenopus oocyte.

236. (New) The cell of claim 230, wherein said T1R2 and T1R3 are derived from different species.

237. (New) The method of claim 230, wherein said T1R2 and T1R3 are of the same species.

238. (New) The cell of claim 230, which further expresses a G protein.

239. (New) The cell of claim 238, wherein said G protein is $G\alpha_{15}$, $G\alpha_{16}$ or gustducin.

240. (New) The cell of claim 230, wherein T1R1 polypeptide is the human, mouse, or rat T1R1 of Figure 1.

241. (New) The cell of claim 230, wherein said T1R1 polypeptide has at least 95% sequence identity to the human, mouse, or rat T1R1 of Figure 1.

242. (New) The cell of claim 230, wherein said T1R1 polypeptide has at least 96% sequence identity to the human, mouse, or rat T1R1 of Figure 1.

243. (New) The cell of claim 230, wherein said T1R2 polypeptide has at least 97% sequence identity to the human, mouse, or rat T1R1 of Figure 1.

244. (New) The cell of claim 230, wherein said T1R1 polypeptide has at least 98% sequence identity to the human, mouse, or rat T1R1 of Figure 1.

245. (New) The cell of claim 230, wherein said T1R2 polypeptide has at least 99% sequence identity to the human, mouse, or rat T1R1 of Figure 1.

246. (New) The cell of claim 230, wherein T1R3 polypeptide is the human, mouse, or rat T1R3 of Figure 1.

247. (New) The cell of claim 230, wherein said T1R3 polypeptide has at least 95% sequence identity to the human, mouse, or rat T1R3 of Figure 1.

248. (New) The cell of claim 230, wherein said T1R3 polypeptide has at least 96% sequence identity to the human, mouse, or rat T1R3 of Figure 1.

249. (New) The cell of claim 230, wherein said T1R3 polypeptide has at least 97% sequence identity to the human, mouse, or rat T1R3 of Figure 1.

250. (New) The cell of claim 230, wherein said T1R3 polypeptide has at least 98% sequence identity to the human, mouse, or rat T1R3 of Figure 1.

251. (New) The cell of claim 230, wherein said T1R3 polypeptide has at least 99% sequence identity to the human, mouse, or rat T1R3 of Figure 1.

252. (New) A membrane extract comprising said heteromeric receptor of claim 230.

253. (New) A lipid bilayer comprising said heteromeric receptor of claim 230.

254. (New) The isolated heteromeric receptor of claim 230 which is immobilized on a solid phase.

255. (New) The isolated heteromeric receptor of claim 230 which is attached to a detectable label.

256. (New) The isolated heteromeric receptor of claim 255, wherein said label is an enzyme, radionuclide, fluorophase or chemiluminescent compound.

257. (New) The isolated heteromeric receptor of claim 230 which is bound to an antibody.

258. (New) The isolated heteromeric receptor of claim 230 which is in solution.